



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/040,272	11/07/2001	Paul Janis Timans	AGX-45-CIP	9676
22827	7590	11/16/2004		
DORITY & MANNING, P.A. POST OFFICE BOX 1449 GREENVILLE, SC 29602-1449			EXAMINER FUQUA, SHAWNTINA T	
			ART UNIT	PAPER NUMBER

3742

DATE MAILED: 11/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/040,272	<b>Applicant(s)</b> TIMANS, PAUL JANIS	
	<b>Examiner</b> Shawntina T. Fuqua	<b>Art Unit</b> 3742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 01 July 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-12, 14-35, 37-78 and 82-139 is/are pending in the application.
- 4a) Of the above claim(s) 16-26 and 37-52 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-12, 14, 15, 27-35, 53-78 and 92-102 is/are allowed.
- 6) ☒ Claim(s) 82-91 and 103-139 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 November 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. §§ 119 and 120**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All   b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)                      4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)                      5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 8/4/04                      6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 82-91, and 103-139 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dobson et al (US4959245) in view of Griner et al (US4780590) and Tanaka (US6693257).

Dobson et al discloses a process for heating semiconductor substrates comprising placing a substrate in a processing chamber (column 3, lines 30, 35-38), directing light energy (9) onto substrate at an angle of incidence greater than 0, 10, 40-85 degrees (column 5, lines 11-23) wherein the light energy contacts the substrate in a p-polarized plane (column 4, lines 7-23), wherein substrate is heated by light energy in combination with other energy sources such as light energy sources (column 6, lines 27-40), light energy source is a pulsed laser beam (9, column 5, lines 11-15) which strikes the substrate to carry out an ion implantation anneal process (column 5, lines 32-34). Dobson et al does not disclose redirecting light energy that is reflected off the substrate onto the substrate, scanning the laser beam over the surface of the substrate, an electrical resistance heater, a laser diode, and a silicon wafer. Griner et al discloses redirecting light energy that is reflected off the substrate onto the substrate (column 9, lines 57-63), scanning the laser beam over the surface of the substrate (abstract), and Tanaka discloses a laser diode (column 5, lines 10-14, 32-43) and a silicon wafer (column 13, lines 54-66). It would have been

Art Unit: 3742

obvious to one of ordinary skill in the art at the time the invention was made to have included the light energy control aspect, and scanning of Griner et al along with the laser diode and silicon wafer of Tanaka in the process of Dobson et al because, changing the configuration of light energy to change the amount of light absorbed by the substrate, redirecting light energy that is reflected off the substrate onto the substrate, scanning the laser beam over the surface of the substrate, and using a laser diode allows the substrate temperature to be controlled more accurately.

In addition, while neither Dobson et al or Griner et al discloses an electric resistance heater, Dobson et al does disclose a substrate heater in contact with the sample via the support stage. This disclosure suggests that the substrate support is heated and is acting as a heated plate. A heating plate with an electric resistance heater is conventional and well known. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have included an electric resistance heater in the substrate support as a means to heat the substrate more uniformly.

***Allowable Subject Matter***

3. Claims 1-12, 14-15, 27-35, 53-78, and 92-102 are allowed.

***Response to Arguments***

4. Applicant's arguments with respect to claim have been considered but are moot in view of the new ground(s) of rejection.

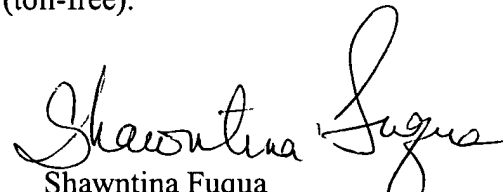
***Conclusion***

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shawntina T. Fuqua whose telephone number is (703) 305-2581. The examiner can normally be reached on Monday-Friday 8-4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robin Evans can be reached on (703) 305-5766. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

stf  
November 15, 2004

  
Shawntina Fuqua  
Patent Examiner  
Art Unit 3742